

PointSystem™
Conversion Center™

CPSMC1800-200, CPSMC1810-200, CPSMC1850-200

USER'S GUIDE

(revision B)

COMPLIANCE INFORMATION

UL Listed

C-UL Listed (Canada)

CISPR22/EN55022 Class A + EN55024

CE Mark

FCC Regulations

This equipment has been tested and found to comply with the limits for a class A & B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at the user's own expense.

Canadian Regulations

This digital apparatus does not exceed the Class A & B limits for radio noise for digital apparatus set out on the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A & B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

European Regulations

Warning

This is a Class A & B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Achtung !

Dieses ist ein Gerät der Funkstörgrenzwertklasse A & B. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten, in welchen Fällen der Benutzer für entsprechende Gegenmaßnahmen verantwortlich ist.

Attention !

Ceci est un produit de Classe A & B. Dans un environnement domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilisateur de prendre les mesures spécifiques appropriées



CAUTION: RJ CONNECTORS ARE NOT INTENDED FOR CONNECTION TO THE PUBLIC TELEPHONE NETWORK. Failure to observe this caution could result in damage to the public telephone network.

Der Anschluss dieses Gerätes an ein öffentliches Telekommunikationsnetz in den EG-Mitgliedstaaten verstösst gegen die jeweiligen einzelstaatlichen Gesetze zur Anwendung der Richtlinie 91/263/EWG zur

Angeleichung der Rechtsvorschriften der Mitgliedstaaten über Telekommunikationsendeinrichtungen einschliesslich der gegenseitigen Anerkennung ihrer Konformität.

Trademark Notice

All registered trademarks and trademarks are the property of their respective owners.

Copyright Restrictions

© 2000-2003 TRANSITION Networks.

All rights reserved. No part of this work may be reproduced or used in any form or by any means – graphic, electronic, or mechanical – without written permission from TRANSITION Networks.

Printed in the U.S.A.

33185.B

Table of Contents

1.	INTRODUCTION	1-1
1.1	The PointSystem™ Conversion Center	1-2
1.2	AC Power Supply Module	1-2
1.3	Optional Redundant AC Power Supply Module	1-3
1.4	Optional 48-VDC Power Supply Module	1-3
1.5	Media Converter Slide-in-Modules	1-4
1.6	Telco Option	1-4
1.7	Management Module(s)	1-5
2.	INSTALLATION & SERVICE	2-1
2.1	Unpacking CPSMC18xx Equipment	2-2
2.2	Installing Optional Management Module in Conversion Center Chassis	2-3
2.3	Installing Selected Media Converter Slide-in-Module(s) in Conversion Center Chassis	2-5
2.4	Installing Optional Power Supply Module	2-6
2.4.1	Setting Master/Slave-Management/Manual Switch	2-7
2.4.2	Securing Power Supply Module to Chassis	2-8
2.5	Installing Optional Fan Module	2-10
2.6	Installing Conversion Center at Site	2-11
2.6.1	Standard 19-Inch Rack Installation	2-11
2.6.2	Table-Top Installation	2-12
2.7	Optionally Cascading Management Modules	2-13
2.8	Connecting Media Converter Slide-In-Modules to Network	2-14

2.9	Connecting to Optional Telco Network	2-15
2.10	Powering the Conversion Center	2-17
2.10.1	Through the AC Power Supply Module	2-17
2.10.2	Through the 48-VDC Power Supply Module	2-18
3.	OPERATION	3-1
3.1	Conversion Center LED Indicators	3.2
3.2	Media Conv. Slide-In-Module LED Indicators	3.2
4.	MAINTENANCE & SERVICE	4-1
4.1	Replacing AC Power Supply Module	4-2
4.2	Replacing 48-VDC Power Supply Module	4-4
4.3	Replacing 48-VDC Power Supply Module Fuse	4-7
4.4	Replacing AC Power Supply Module Fuse	4-9
4.5	Replacing Media Converter Slide-In-Module	4-10
APPENDIX A. TECHNICAL SPECIFICATIONS		A-1
APPENDIX B. POWER CONSUMPTION DATA SHEET		B-1

1. INTRODUCTION

The modular TRANSITION Networks *PointSystem*[™] CPSMC18xx series 18-Slot Conversion Center allows the network administrator to install selected TRANSITION Networks Media Converter Slide-in-Modules for connecting various copper and fiber network media, over protocols that include Ethernet[™], Fast Ethernet[™], DS3/E3, and OC-12.

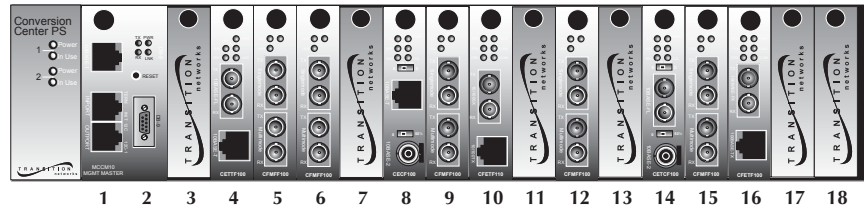
This introduction to the 18-Slot Conversion Center provides:

1.1	<i>The PointSystem[™] Conversion Center</i>	1-2
1.2	<i>AC Power Supply Module</i>	1-2
1.3	<i>Optional Redundant AC Power Supply Module</i>	1-3
1.4	<i>Optional 48-VDC Power Supply Module</i>	1-3
1.5	<i>Media Converter Slide-in-Modules</i>	1-4
1.6	<i>Telco Option</i>	1-4
1.7	<i>Management Module(s)</i>	1-5

NOTE: A *PointSystem*[™] Conversion Center with an installed Management Module can be managed using an SNMP application such as TRANSITION Networks *FocalPoint*^{4™} management software installed at a remote Network Management Station (NMS), using a remote Web browser, or using a command-line-interface at an attached terminal or at a remote Telnet connection.

1.1 The PointSystem™ Conversion Center

The modular Transition Networks 18-Slot *PointSystem™ Conversion Center™* chassis provides installation space in the front for up to eighteen (18) Media Converter Slide-in-Modules and installation space in the back for one or two Power Supply Modules. Media Converter Slide-in-Modules and Power Supply Modules are all hot-swappable.

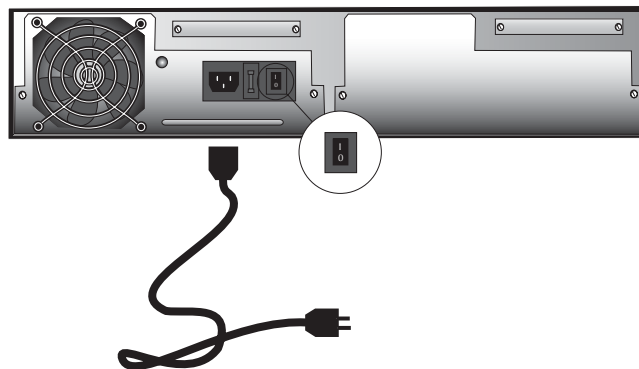


Power and **In Use** LED indicators for *each* installed Power Supply Module are located on the front of the CPSMC18xx.

LED indicators for each Slide-in-Module, Power Supply Module, and Management Module are located on the installed module(s).

1.2 AC Power Supply Module

An AC Power Supply Module, installed at the back of the Conversion Center before shipment, supplies power to the Conversion Center, to installed Media Converter Slide-in-Modules, and to optional Management Modules.



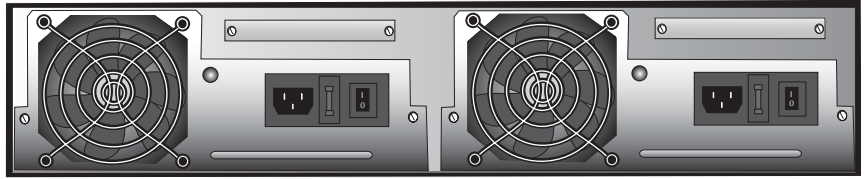
The AC Power Module provides:

- An external power cord that distributes power from an external AC outlet to an *AC power connector* on the AC Power Supply Module.
- An **ON/OFF** switch that, set to **I**, allows the AC Power Supply Module to supply power to the Conversion Center and installed Slide-in-Modules.
- A *power LED indicator*.

NOTE: An AC Power Supply Module *fuse* is installed in a fuse holder located between the AC power connector and the ON/OFF switch.

1.3 Optional Redundant AC Power Supply Module

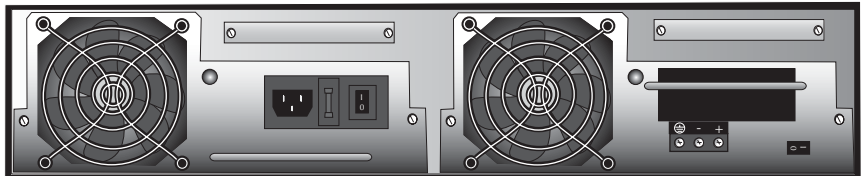
Space is available at the back of the Conversion Center for installing an optional redundant AC Power Supply Module.



NOTE: If two Power Supply Modules are to be installed in the Conversion Center, the network administrator can set Master/Slave switches located on the Power Supply Modules to share power distribution automatically between the two Power Supply Modules OR to make one of the two Power Supply Modules primary and the other Power Supply Module secondary.

1.4 Optional 48-VDC Power Supply Module

Alternatively, an optional 48-VDC Power Supply Module can be installed in either space or in both spaces.



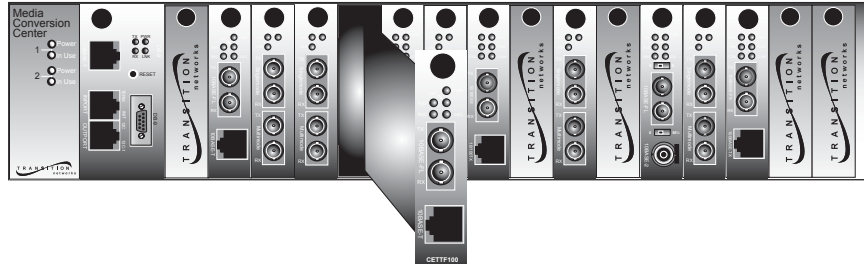
The 48-VDC Power Module provides:

- A three-position terminal block
- A set of three (3) external power connectors that distribute power from an external 48-VDC outlet to a *chassis ground connector*, a *negative (-) connector*, and a *positive (+) connector* on the 48-VDC Power Supply Module
- An **ON/OFF** switch that, set to **I**, allows the 48-VDC Power Supply Module to supply power to the Conversion Center and to installed Media Converter Slide-in-Modules and Management Modules
- An *LED indicator* for power.

NOTE: A 48-VDC Power Supply Module *fuse* is installed on the 48-VDC Power Supply Module circuit board.

1.5 Media Converter Slide-in-Modules

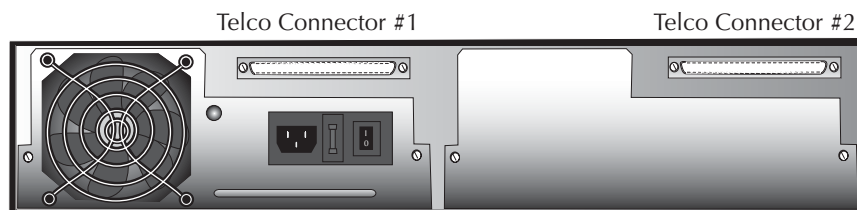
Transition Networks Media Converter Slide-in-Modules, installed in slots at the front of the Conversion Center, allow the network administrator to connect various network media.



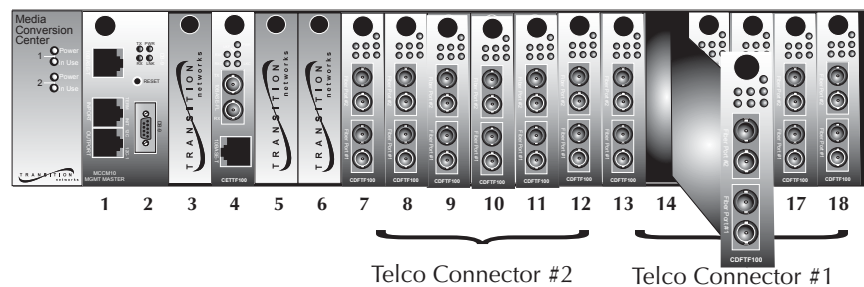
NOTE: Refer to the documentation that comes with each Media Converter Slide-in-Module for cable, connector, and LED indicator information specific to that Media Converter Slide-in-Module.

1.6 Telco Option

The CPSMC1850 Conversion Center is shipped with two (2) 50-pin Telco connectors installed at the chassis back.



Each Telco 50-pin connector concentrates up to twelve (12) UTP connections onto one connector. This concentration of twelve UTP ports is broken out for connection to six (6) Media Converter Slide-In-Module installation slots, two (2) connections to each slot. Signals from one Telco connector go to slots 7-12 and signals from the other Telco connector go to slots 13-18.

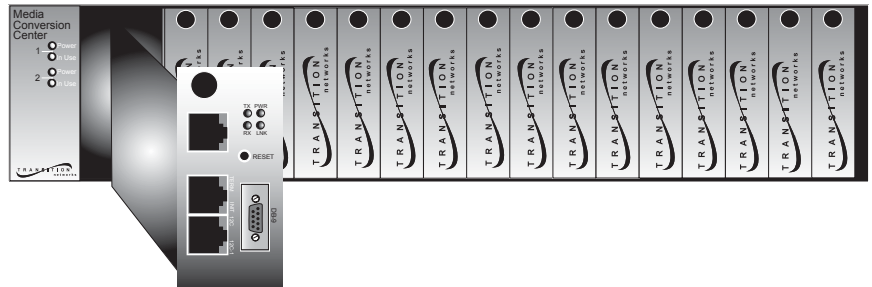


1.7 Management Module(s)

Optional network management is provided by SNMP software embedded in TRANSITION Networks *PointSystem™* Management Module(s) that can be installed in the CPSMC18xx series Conversion Center.

Base Management Module

The CPSMM-200 Base Management Module can be installed in the CPSMC18xx series Conversion Center to enable network management.



The CPSMM-200 Base Management Module provides:

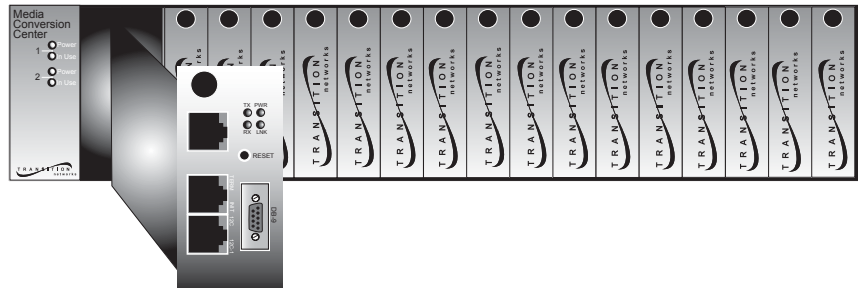
- A **DB-9 SERIAL-PORT**, by which the Base Management Module communicates with the command-line interface
- An **RJ-45 ETHERNET PORT**, by which the Base Management Module communicates, through the Ethernet™ network, with a remote Network Management Station (NMS) or a Telnet connection
- A set of RJ-45 **CASCADE PORTS**, by which the Base Management Module is connected to other Management Module(s)
- A **RESET** switch which resets the *Management Module ONLY*
- **POWER, LINK, RX** (*receive*) and **TX** (*transmit*) LED indicators.

NOTE: When two or more 18-Slot Network Conversion Centers are connected, a second Base Management Module can be configured as redundant.

NOTE: A non-cascading CPSMM-120 Base Management Module is available with identical connectors, indicators, and switch as on the CPSMM-200, but without the RJ-45 cascade ports.

Expansion Management Module

The CPSMM-210 Expansion Management Module is installed in the CPSMC18xx series Conversion Center to extend network management.

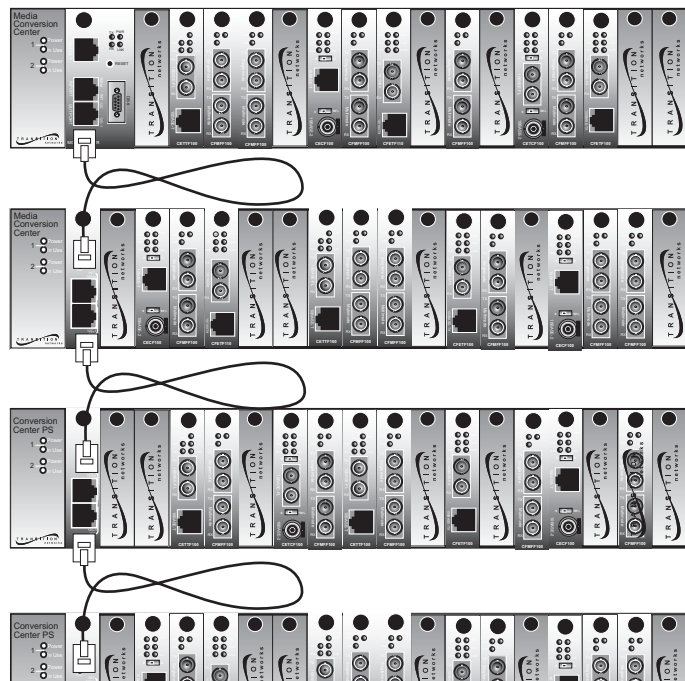


The Expansion Management Module provides:

- A set of non-Ethernet RJ-45 **CASCADE PORTS**, by which the Expansion Management Module is connected to other Management Module(s)
- A **RESET** switch which resets the *Management Module ONLY*

Cascade Option

The Management Module *Cascade option* allows the network administrator to connect up to eight (8) CPSMC18xx series Conversion Center PS units into one manageable stack, providing a single management source for up to 135 conversion devices.



2 INSTALLATION & SERVICE

Direction for installing the TRANSITION Networks *PointSystem™*
CPSMC18xx series 18-Slot Conversion Center includes:

2.1	Unpacking CPSMC18xx Equipment	2-2
2.2	Installing Optional Management Module in Conversion Center Chassis	2-3
2.3	Installing Selected Media Converter Slide-in-Module(s) in Conversion Center Chassis	2-5
2.4	Installing Optional Power Supply Module	2-6
2.4.1	Setting Master/Slave-Management/Manual Switch	2-7
2.4.2	Securing Power Supply Module to Chassis	2-8
2.5	Installing Optional Fan Module	2-10
2.6	Installing Conversion Center at Site	2-11
2.6.1	Standard 19-Inch Rack Installation	2-11
2.6.2	Table-Top Installation	2-12
2.7	Optionally Cascading Management Modules	2-13
2.8	Connecting Media Converter Slide-In-Modules to Network	2-14
2.9	Connecting to Optional Telco Network	2-15
2.10	Powering the Conversion Center	2-17
2.10.1	Through the AC Power Supply Module	2-17
2.10.2	Through the 48-VDC Power Supply Module	2-18

All Installation and service must be performed by qualified service personnel.

2.1 Unpacking CPSMC18xx Equipment

Use the following list to verify the shipment:

Item	Part Number
18-Slot Conversion Center	CPSMC1800-200
18-Slot Conversion Center with 48-volt per supply	CPSMC1810-200
18-Slot Conversion Center with two (2) Telco connectors	CPSMC1850-200
Power Cord	3344 (OR 3347, 3348, or 3349, depending upon country where installed)
Redundant AC Power Supply Module	CPSMP-200 (optional)
48-VDC Power Supply Module	CPSMP-210 (optional)
Redundant Fan Module	CPSFM-200 (optional)
2-slot Base Management Module	CPSMM-200 (optional)
1-slot Base Management Module	CPSMM-100 (optional)
FocalPoint™ Software Disk	FPS (provided with CPSMM-200)
Expansion Management Module	CPSMM-210 (optional)
Management Cascade Connector	6026 (optional)
RJ-21 (male) to (12) RJ-45 Hydra cable	21TC45-6 (optional)
RJ-21 to RJ-21 (male-to-male)	21TC21-6 (optional)
User's Guide	33185
One or more selectable Media Converter Slide-in-Modules	Cnnnnxxxx

2.2 Installing Optional Management Module in Conversion Center Chassis

CAUTION: Wear a grounding device and observe electrostatic discharge precautions when installing Management Module in the 18-Slot Conversion Center. Failure to observe this caution could result in damage to, and subsequent failure of, the Management Module.

NOTE: Install one (1) *Base Management Module* (CPSMM-200) in the primary – or only – managed CPSMC18xx Conversion Center. Install one (1) *Base Management Module* (CPSMM-200) or one (1) *Expansion Management Module* (CPSMM-210) in any secondary managed CPSMC18xx Conversion Center.

To install a Management Module in the CPSMC18xx chassis:

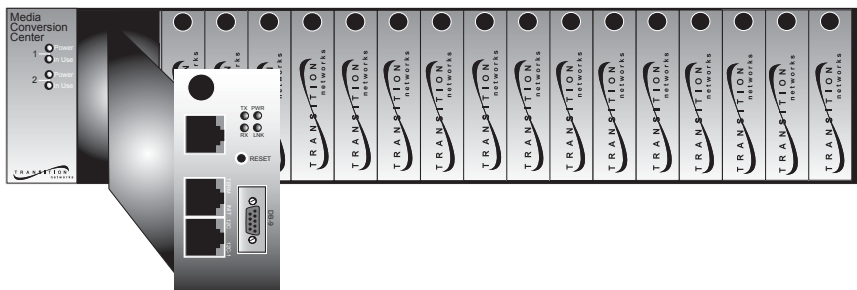
1. Carefully place CPSMC18xx on table or other flat, stable surface.
2. At CPSMC18xx front, locate Management Module installation slot on CPSMC18xx chassis.

NOTE: Though Management Module(s) can be installed in any Conversion Center slot, use of the leftmost installation slots for installing Management Module(s) is recommended in order to keep cascading cables separate from network cables installed on Media Converter Slide-In-Modules.

3. *CPSMM-200 2-Slot Base Management Module* Remove two (2) Management Module protective plates from two (2) installation slots **at far left position** by removing one (1) screw that secures **each** protective plate to CPSMC18xx chassis.

OR

CPSMM-200 2-Slot Base Management Module OR CPSMM-210 Expansion Management Module Remove one (1) Management Module protective plate from one (1) installation slot **at far left position** by removing one (1) screw that secures protective plate to CPSMC18xx chassis.



-
4. Align Management Module with Conversion Center installation slot so that panel fastener screw is at top of Management Module.
 5. Carefully slide Management Module into installation slot, aligning Management Module with installation guides.

NOTE: Ensure that Management Module is firmly seated against backplane.

6. Rotate attached panel fastener screw clockwise to secure Management Module to CPSMC18xx chassis.

2.3 Installing Selected Media Converter Slide-in-Module(s) in Conversion Center Chassis

CAUTION: Before filling Conversion Center with Media Converter Slide-in-Modules, refer to the power consumption data for each model Media Converter Slide-in-Module (provided in User's Guide shipped with Media Converter Slide-in-Module) to determine optimum site configuration. Failure to observe this caution could result in diminishing system reliability.

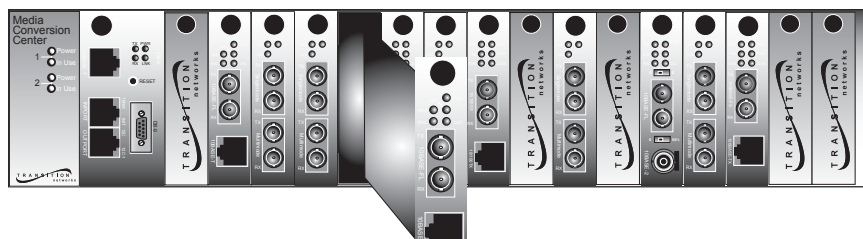
CAUTION: Wear a grounding device and observe electrostatic discharge precautions when installing Media Converter Slide-in-Module(s) in the 18-Slot Conversion Center. Failure to observe this caution could result in damage to, and subsequent failure of, the Media Converter Slide-in-Module(s).

To install the Media Converter Slide-in-Module in the CPSMC18xx 18-Slot Conversion Center chassis:

1. Carefully place the CPSMC18xx 18-Slot Conversion Center on table or other flat, stable surface.
2. Locate Media Converter Slide-in-Module installation slots at CPSMC18xx 18-Slot Conversion Center front.

NOTE: Media Converter Slide-in-Modules can be installed in any installation slot, in any order.

3. Remove Media Converter Slide-in-Module protective plate from installation slot by removing one (1) screw that secures plate to front of CPSMC18xx.
4. Align Media Converter Slide-in-Module with Conversion Center installation slot so that panel fastener screw is at top of Media Converter Slide-in-Module.



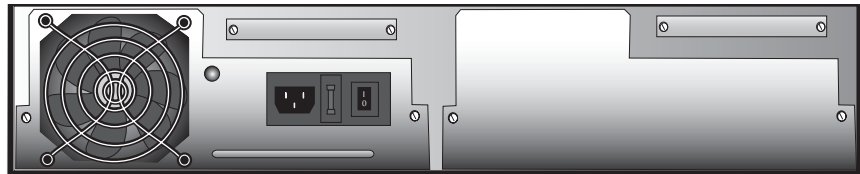
5. Carefully slide Media Converter Slide-in-Module into installation slot.
- NOTE: Ensure that Media Converter Slide-in-Module is firmly seated against backplane.
6. Install Media Converter Slide-in-Module by carefully rotating attached panel fastener screw clockwise to secure Media Converter Slide-in-Module to CPSMC18xx chassis.
 7. Repeat steps 3 through 6 for additional Media Converter Slide-in-Module(s).

2.4 Installing Optional Power Supply Module

WARNING: DO NOT CONNECT POWER SUPPLY MODULE TO EXTERNAL POWER BEFORE INSTALLING IN CONVERSION CENTER. FAILURE TO OBSERVE THIS CAUTION COULD RESULT IN EQUIPMENT DAMAGE AND/OR PERSONAL INJURY OR DEATH.

CAUTION: Wear a grounding device and observe electrostatic discharge precautions when setting configuration switch and when installing Power Supply Module in Conversion Center. Failure to observe this caution could result in damage to, and subsequent failure of, Power Supply Module.

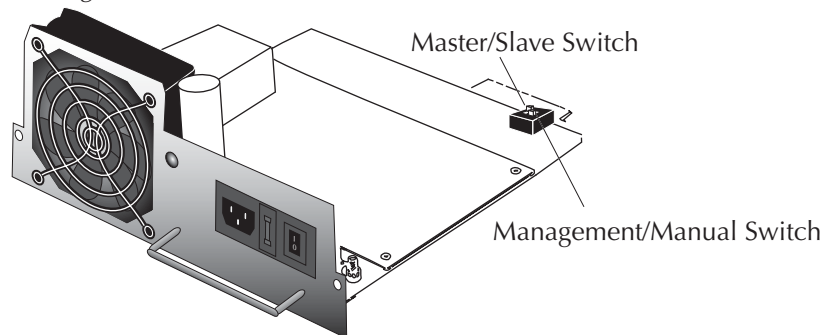
The standard CPSMC18xx is shipped, as shown, with one (1) AC Power Supply Module installed at the back of the CPSMC18xx cabinet and with a protective plate covering an installation slot intended for a second, optional Power Supply Module.



NOTE: Power Supply Modules can be “hot swapped”, ***PROVIDED THE POWER SUPPLY BEING INSTALLED OR REMOVED IS DISCONNECTED FROM EXTERNAL POWER BEFORE BEING INSTALLED OR REMOVED.***

2.4.1 Setting Master/Slave-Management/Manual Switch

The CPSMC18xx Power Supply Module has a set of Master/Slave-Management/Module switches installed on the circuit board.



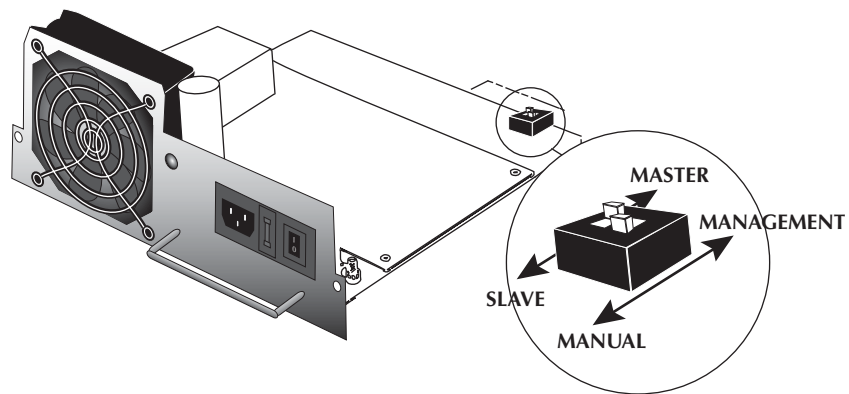
*The **MASTER/SLAVE** switch allows the Power Supply Module to be configured as the primary (master) or as the secondary (slave). As primary (master), the Power Supply Module provides power to the chassis and all installed Slide-In-Cards, unless prevented from doing so due to external power source failure. As secondary (slave), the Power Supply Module waits in stand-by, ready to supply power to the chassis on primary (master) power source failure.*

*The **MANAGEMENT/MANUAL** switch allows TRANSITION Networks PointSystem™ software to control the primary (master) or secondary (slave) Power Supply Module setting AND TO OVER-RIDE THE PHYSICAL MASTER/SLAVE SWITCH SETTING ON THE POWER SUPPLY MODULE.*

NOTE: When the MANAGEMENT/MANUAL switch is set to MANAGEMENT, the default MASTER/SLAVE configuration is primary (master) unless changed, at the software interface, to secondary (slave).

CAUTION: When installing two Power Supply Modules, AT LEAST ONE Power Supply Module MUST BE CONFIGURED AS PRIMARY (master). Failure to observe this caution could result in damage to, and subsequent failure of, Power Supply Module(s).

CAUTION: In a 0-60° C environment, TWO POWER SUPPLIES MUST BE INSTALLED AND THE POWER SUPPLIES MUST BE CONFIGURED FOR LOAD-SHARING: one Power Supply Module must be configured as primary (master) and one Power Supply Module must be configured as secondary (slave). Failure to observe this caution could result in data transfer failure and/or damage to, and subsequent failure of, Power Supply Module(s).



NOTE: If both Power Supply Modules are configured as the primary (master) Power Supply Module, each Power Supply Module contributes a portion of the power to the chassis ("load sharing").

AC and DC Power Supply Modules are not intended to load share when used concurrently. When operating a Conversion Center with an AC Power Supply Module in one slot and a DC Power Supply Module in the other, both Supplies may not be set to 'Primary' (i.e., master).

1. Set MASTER/SLAVE switch, if necessary.

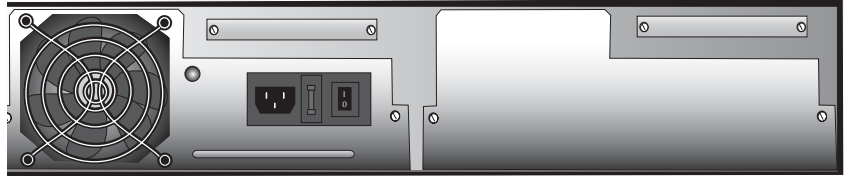
To configure the Power Supply Module as the primary (master) Power Supply Module, set MASTER/SLAVE switch to position labeled "MASTER". To configure the Power Supply Module as the secondary (slave) Power Supply Module, set MASTER/SLAVE switch to position labeled "SLAVE".

2. Set MANAGEMENT/MANUAL switch, if necessary.

To allow *PointSystem*™ software to over-ride the physical MASTER/SLAVE switch setting, set MANAGEMENT/MANUAL switch to position labeled "MANAGEMENT". To prevent *PointSystem*™ software from over-riding the physical MASTER/SLAVE switch setting, set MANAGEMENT/MANUAL switch to position labeled "MANUAL".

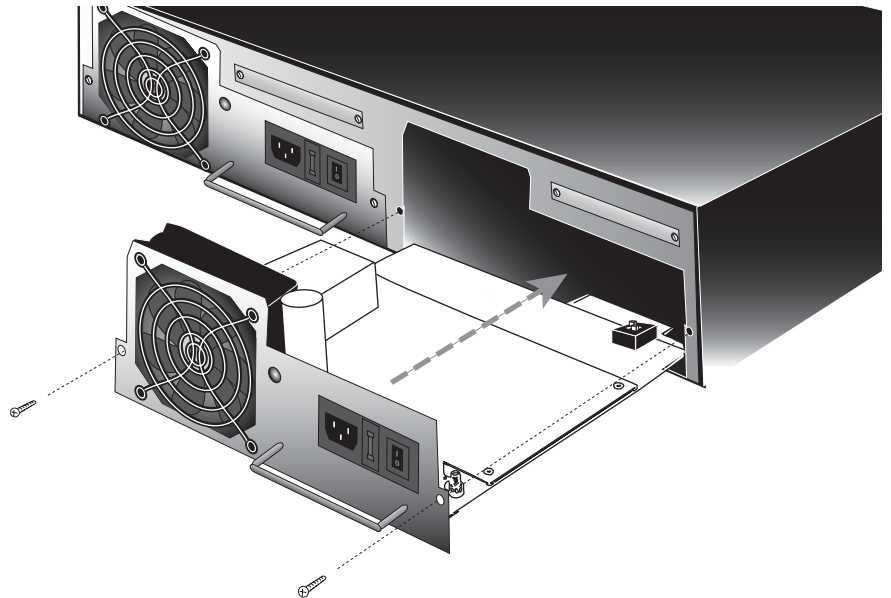
2.4.2 Securing Power Supply Module to Chassis

1. Locate protective plate at Power Supply Module installation slot on Conversion Center chassis back.
2. Remove Power Supply Module protective plate from installation slot by removing and retaining two (2) screws that secure protective plate to back of Conversion Center chassis.



3. Carefully slide Power Supply Module into Conversion Center installation slot, aligning Power Supply Module with installation guides.

NOTE: Ensure that Power Supply Module is firmly seated against chassis backplane. If the Power Supply Module does not fit flush against the frame, remove Power Supply Module from Conversion Center and repeat step 3 to ensure that Power Supply Module is aligned with installation guides.

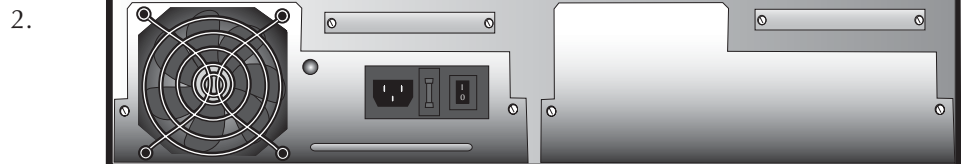


4. Carefully install two (2) screws (retained in Step 2) through Power Supply Module into Conversion Center, rotating clockwise to secure.

2.5 Installing Optional Fan Module

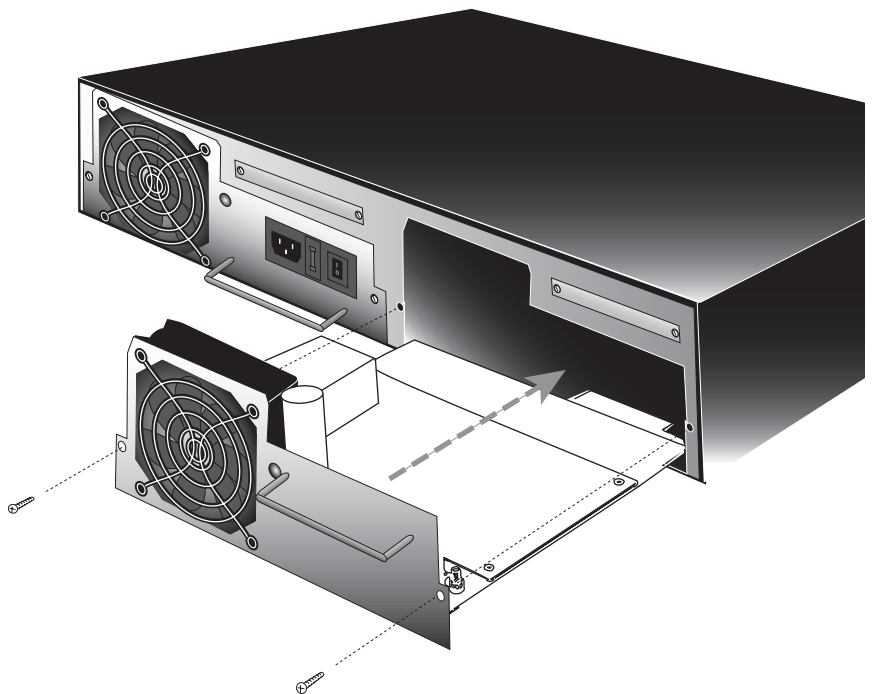
CAUTION: Wear a grounding device and observe electrostatic discharge precautions when installing Fan Module in Conversion Center. Failure to observe this caution could result in damage to, and subsequent failure of, Fan Module.

1. Locate protective plate at Power Supply Module/Fan Module installation slot on Conversion Center chassis back.



Remove protective plate from installation slot by removing and retaining two (2) screws that secure protective plate to back of Conversion Center chassis.

3. Carefully slide Fan Module into Conversion Center installation slot, aligning Fan Module with installation guides.



NOTE: Ensure that Fan Module is firmly seated against chassis backplane.

4. Carefully install two (2) retained screws through Fan Module into Conversion Center, rotating clockwise to secure.

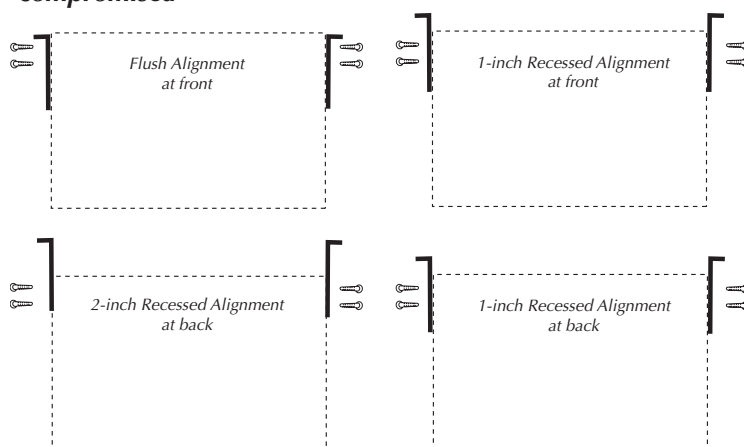
2.6 Installing Conversion Center at Site

The CPSMC18xx can be installed in a standard 19-inch rack or on a table, shelf, or other stable surface.

2.6.1 Standard 19-Inch Rack Installation

The maximum recommended ambient temperature (T_{mra}) for the Conversion Center is 50°C. (60°C when using load sharing Power Supply Modules) If the Conversion Center is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the the rack environment may be greater than room ambient. Consideration should be given to installing the Conversion Center in an environment compatible with the T_{mra} .

Installation of the Conversion Center in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised



NOTE: The 18-Slot Conversion Center is designed so that the installation brackets can be installed to align the Conversion Center chassis either *flush* against the front or back edge of the rack or *recessed* from the front or back edge of the rack.

WARNING: SELECT MOUNTING BRACKET LOCATIONS ON THE CONVERSION CENTER THAT WILL KEEP THE CONVERSION CENTER BALANCED WHEN MOUNTED IN THE RACK. FAILURE TO OBSERVE THIS WARNING COULD ALLOW THE CONVERSION CENTER TO FALL, RESULTING IN EQUIPMENT DAMAGE AND/OR POSSIBLE INJURY TO PERSONNEL.

Consideration should be given to the connection of the Conversion Center to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplates should be used when addressing this concern.

Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips).

To install the 18-Slot Conversion Center in a standard 19-inch rack:

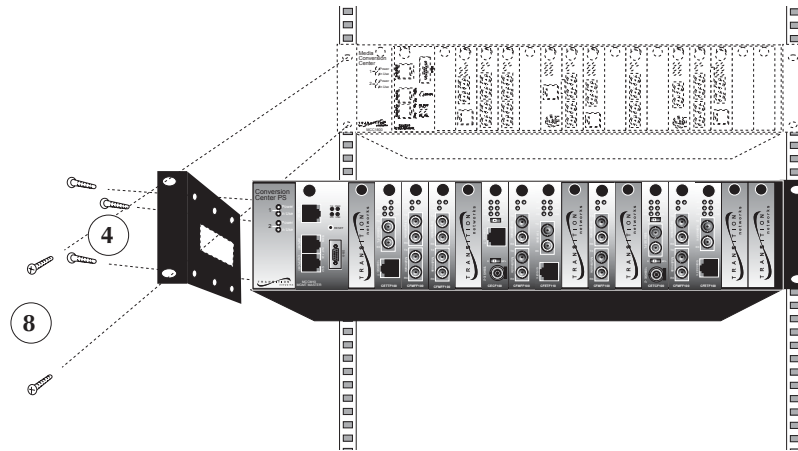
1. Determine preferred alignment of Conversion Center in rack.

NOTE: Installation bracket mounting screws are provided.
Rackmount screws and clip nuts are NOT provided.

2. Locate six (6) installation bracket mounting screws (*provided*) for each 18-Slot CPSMC18xx chassis to be installed.

WARNING: Mount Conversion Center chassis evenly and securely in rack. Failure to observe this warning could allow the Conversion Center to fall, resulting in equipment damage and/or possible injury to personnel.

3. Align universal mounting bracket in selected position against side of CPSMC18xx chassis so that chassis installation holes are visible through universal bracket installation holes.
4. Using Phillips screwdriver, install three (3) screws through mounting bracket into chassis installation holes on side of 18-Slot Conversion Center.
5. Repeat steps 3 and 4 for second mounting bracket.
6. Locate four (4) screws (*not provided*) and optional clip-nuts (*not provided*) for each 18-Slot Conversion Center to be installed.



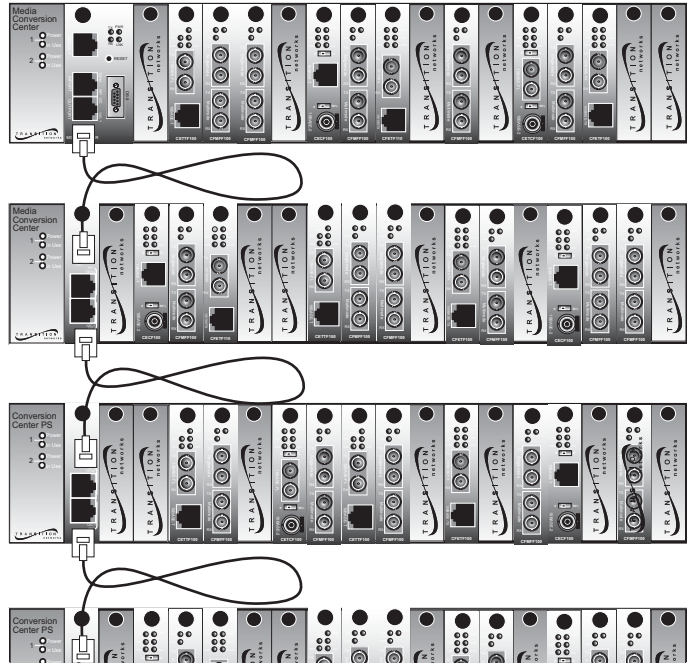
7. Carefully align 18-Slot Conversion Center at secure and level position between the 19-inch site rack mounting rails.
8. Install two (2) screws through right bracket into right mounting rail and two (2) screws through left bracket into left mounting rail, using clip nuts to secure if necessary.

2.6.2 Table-Top Installation

The CPSMC18xx is shipped with installed rubber feet for optional installation on table or other flat, stable surface in well-ventilated area.

2.7 Optionally Cascading Management Modules

Cascade up to **seven (7)** CPSMC18xx Media Conversion Centers with installed **Expansion** Management Modules to one (1) CPSMC18xx Media Conversion Center with an installed **Base** Management Module.



Alternatively, install two **Base** Management Modules in a two-CPSMC18xx Conversion Center stack and cascade the Base Management Modules for redundant management.

To cascade two or more CPSMC18xx units:

1. Locate one (1) TRANSITION Networks CPSMC18xx Management Module cascade cable (with RJ-45 connectors installed at both ends) for each set of two (2) CPSMC18xx units to be cascaded.

NOTE: TRANSITION Networks CPSMC18xx Management Module cascade cables are one (1) meter long; ensure that CPSMC18xx units are installed within one (1) meter of each other.
2. Plug RJ-45 connector at one end of at CPSMC18xx Management Module cascade cable into *Base* Management Module RJ-45 connector at front of CPSMC18xx unit labeled **OUT**.
3. Plug RJ-45 connector at other end of at CPSMC18xx Management Module cascade cable into *Expansion* Management Module or second *Base* Management Module RJ-45 connector at front of *next* CPSMC18xx unit labeled **IN**.
4. Plug RJ-45 connector at one end of at CPSMC18xx Management Module cascade cable into *Expansion* Management Module or second *Base* Management Module RJ-45 connector at front of *that* CPSMC18xx unit labeled **OUT**.
5. Plug RJ-45 connector at other end of at CPSMC18xx Management Module cascade cable into *Expansion* Management Module RJ-45 connector at front of *next* CPSMC18xx unit labeled **IN**.
6. Repeat steps 4 and 5 until all CPSMC18xx units have been cascaded

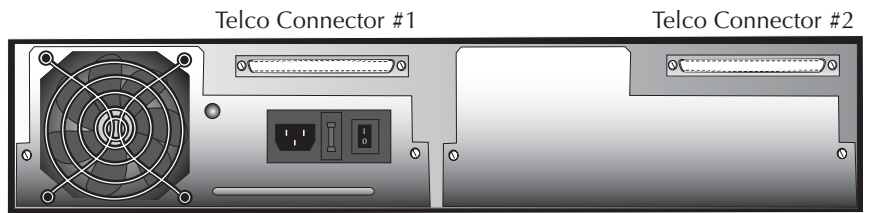
2.8 Connecting Media Converter Slide-In-Modules to Network

CAUTION: Connect input/output network cables **ONLY** to Media Converter Slide-In-Module connectors within the same network protocol (such as Ethernet-to-Ethernet, Fast Ethernet-to-Fast Ethernet, ATM-to-ATM). Failure to observe this caution will cause data transfer to fail.

Refer to User's Guides that come with the Media Converter Slide-In-Modules for cabling specifications and direction.

2.9 Connecting to Optional Telco Network

Refer to the data on these pages when connecting to Telco.



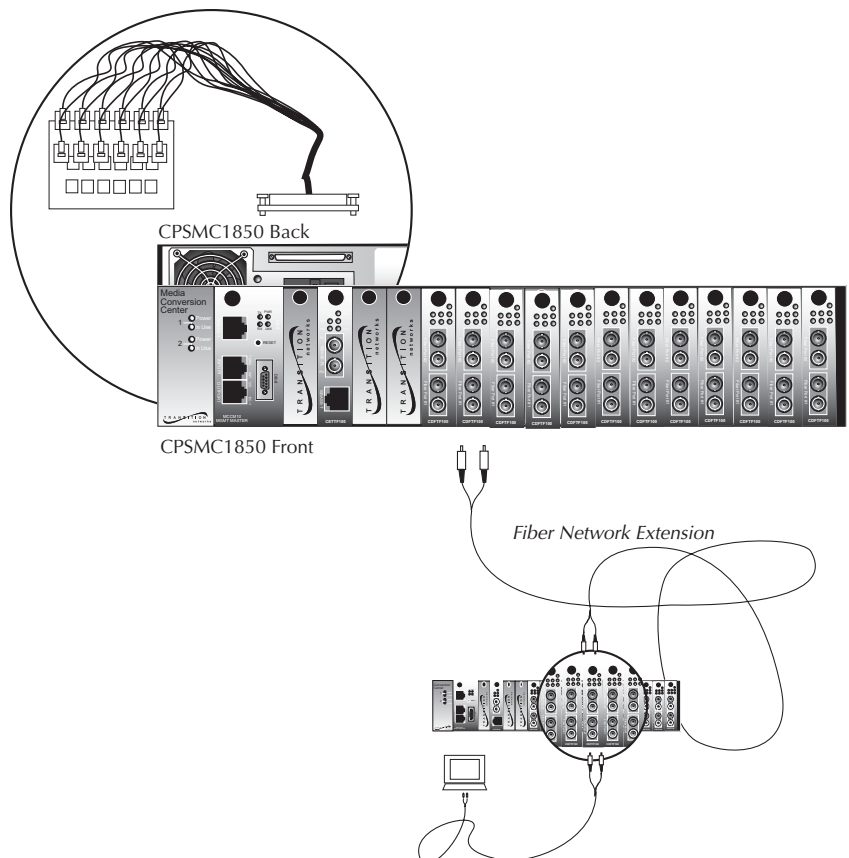
The Telco option CPSMC1850 Conversion Center is shipped with two (2) 50-pin Telco connectors installed at the chassis back.

Cables for connecting between the Telco network and the CPSMC1850 Conversion Center are available from Transition Networks:

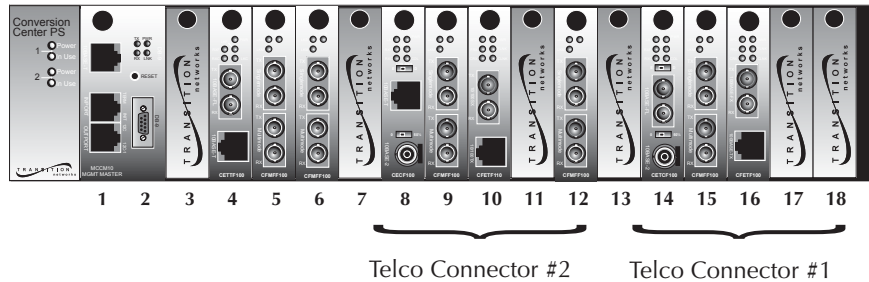
21HC45-6 - Telco cable with twelve (12) RJ-45 connectors at one end and RJ-21 connector at other end

21HC21-6 - Telco cable with RJ-21 connectors at both ends.

Each Telco 50-pin connector concentrates up to twelve (12) UTP connections, which are broken out to six (6) Media Converter Slide-In-Module installation slots.



Signals from Telco connector #2 go to slots 7-12 and signals from the Telco connector #1 go to slots 13-18. Two (2) sets of signals go to the connector on the upper portion of the media converter (Converter 1) and two (2) sets of signals go to the connector on the lower portion of the media converter (Converter 2).



NOTE: The chart below shows the 50 signals that go through each Telco connector on the CPSMC1800 to slots 7-12 (Telco connector #2) or to slots 13-18 (Telco connector #1). In addition, the chart shows how the signals are distributed to the upper and lower ports in a media converter installed each slot.

TELCO CONNECTOR



		Pin #	Signal	Pin #	Signal
CHASSIS SLOT #7 or 13	UPPER	1	Port 1 Transmit -	26	Port 1 Transmit +
		2	Port 1 Receive -	27	Port 1 Receive +
	LOWER	3	Port 2 Transmit -	28	Port 2 Transmit +
		4	Port 2 Receive -	29	Port 2 Receive +
CHASSIS SLOT #8 or 14	UPPER	5	Port 3 Transmit -	30	Port 3 Transmit +
		6	Port 3 Receive -	31	Port 3 Receive +
	LOWER	7	Port 4 Transmit -	32	Port 4 Transmit +
		8	Port 4 Receive -	33	Port 4 Receive +
CHASSIS SLOT #9 or 15	UPPER	9	Port 5 Transmit -	34	Port 5 Transmit +
		10	Port 5 Receive -	35	Port 5 Receive +
	LOWER	11	Port 6 Transmit -	36	Port 6 Transmit +
		12	Port 6 Receive -	37	Port 6 Receive +
CHASSIS SLOT #10 or 16	UPPER	13	Port 7 Transmit -	38	Port 7 Transmit +
		14	Port 7 Receive -	39	Port 7 Receive +
	LOWER	15	Port 8 Transmit -	40	Port 8 Transmit +
		16	Port 8 Receive -	41	Port 8 Receive +
CHASSIS SLOT #11 or 17	UPPER	17	Port 9 Transmit -	42	Port 9 Transmit +
		18	Port 9 Receive -	43	Port 9 Receive +
	LOWER	19	Port 10 Transmit -	44	Port 10 Transmit +
		20	Port 10 Receive -	45	Port 10 Receive +
CHASSIS SLOT #12 or 18	UPPER	21	Port 11 Transmit -	46	Port 11 Transmit +
		22	Port 11 Receive -	47	Port 11 Receive +
	LOWER	23	Port 12 Transmit -	48	Port 12 Transmit +
		24	Port 12 Receive -	49	Port 12 Receive +
		25	N.C.	50	N.C.

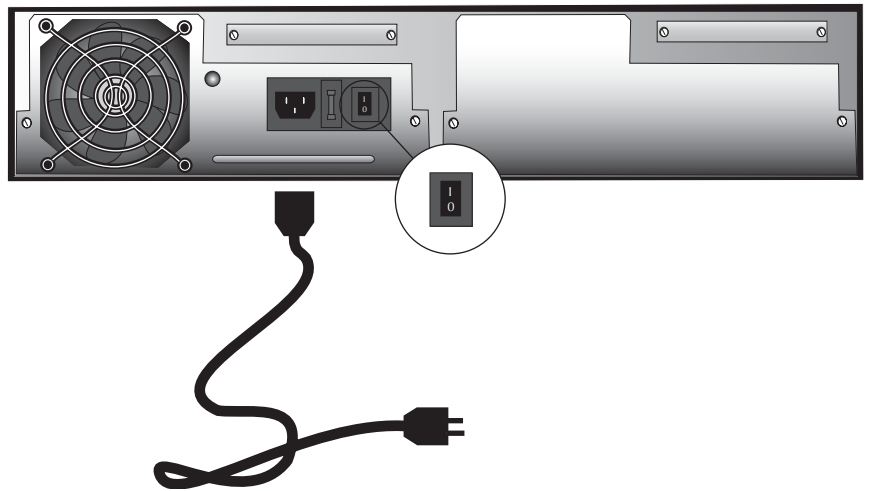
2.10 Powering the Conversion Center

The 18-Slot Conversion Center can be powered through the AC Power Supply Module and/or through the 48-VDC Power Supply Module.

2.10.1 Through the AC Power Supply Module

To power the 18-Slot Conversion Center through the AC Power Supply Module:

1. Connect female end of power cord to power receptacle on Power Supply Module.



2. Plug male end of power cord into correct voltage AC rack or wall socket.
3. Set Power Supply Module power switch to I.
4. Verify that Conversion Center is powered by observing illuminated Power LED and fan operation.

2.10.2 Through the 48-VDC Power Supply Module

Read and follow all warning notices and instructions marked on the product or included in the manual

All installation and service must be performed by qualified service personnel.

This product is intended to be used in a restricted access location. Connect the product to a -48VDC SELV (Safety Extra Low Voltage) supply that is electrically isolated from the DC Source. The -48 VDC source is to be reliably connected to earth (ground). Equipment grounding is vital to ensure safe operation.

Prior to installation, use a voltmeter/ohmmeter to check the wiring for the presence of earth ground.

A readily accessible disconnect device as part of the building installation shall be incorporated into the fixed wiring. The disconnect device (a -48 VDC, 15 or 20A circuit breaker or switch) must be included in the ungrounded supply conductor. Overcurrent protection must be a 15 or 20A, -48 VDC fuse or circuit breaker.

CAUTION: Ensure that power source is NOT powered and that 48-VDC power ON/OFF switch is set to "O" when connecting to 48-VDC Power Supply Module. Failure to observe this caution could result in damage to, and subsequent failure of, 48-VDC Power Supply Module.

To power the 18-Slot Conversion Center through the 48-VDC Power Supply Module:

1. Connect +48-VDC terminal to Conversion Center terminal block control marked "+". Turn terminal screw clockwise to secure.
2. Connect -48-VDC terminal to Conversion Center terminal block control marked "-". Turn terminal screw clockwise to secure.
3. Connect ground terminal to Conversion Center terminal block control marked "chassis ground". Turn terminal screw clockwise to secure.
4. Set 48-VDC Power Supply Module power switch to I.

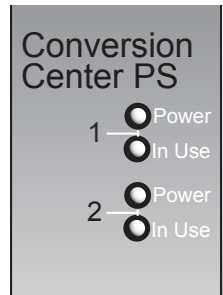
3. OPERATION

Daily operation of the TRANSITION Networks *PointSystem*[™] CPSMC18xx Conversion Center requires no network administrator activity except the occasional monitoring of status LED indicators on the 18-Slot Conversion Center and on installed Media Converter Slide-In-Modules.

3.1 **Conversion Center LED Indicators 3.2**
3.2 **Media Converter Slide-In-Module LED Indicators.....3.2**

NOTE: If a Management Module is installed in the *PointSystem*[™] Conversion Center, see the documentation that comes with the Management Module for direction for using an SNMP application such as TRANSITION Networks *FocalPoint*[™] management software installed at a remote Network Management Station (NMS), using a remote Web browser, or using a command-line-interface at an attached terminal to manage the *PointSystem*[™] Conversion Center.

3.1 Conversion Center LED Indicators

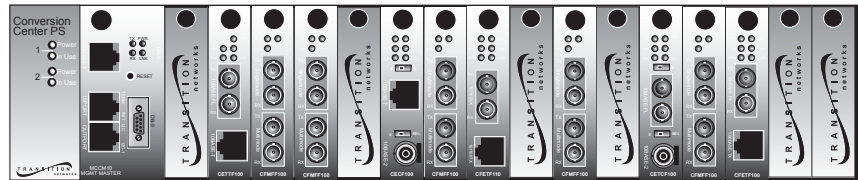


Power and In Use Power Supply Module LED indicators located at the front of the Conversion Center indicate that Power Supply #1 and/or Power Supply #2 is or are installed in the Conversion Center and is or are powering the Conversion Center.

NOTE: A Power LED indicator also is located on each Power Supply Module installed at the back of the Conversion Center.

3.2 Media Converter Slide-In-Module LED Indicators

Refer to the TRANSITION Networks User's Guides that come with each Media Converter Slide-In-Module to interpret the LED indicators on the Media Converter Slide-In-Modules.



4 MAINTENANCE & SERVICE

Maintenance direction for the TRANSITION Networks *PointSystem™* Conversion Center provided in this section includes:

- 4.1 Replacing AC Power Supply Module 4-2
- 4.2 Replacing 48-VDC Power Supply Module 4-4
- 4.3 Replacing 48-VDC Power Supply Module Fuse 4-7
- 4.4 Replacing AC Power Supply Module Fuse 4-9
- 4.5 Replacing Media Converter Slide-In-Module 4-10

NOTE: If a Management Module is installed in the PointSystem™ Conversion Center, see the documentation that comes with the Management Module to find a discussion of PointSystem™ Conversion Center fault isolation and direction for installing firmware upgrades.

All Installation and service must be performed by qualified service personnel.

4.1 Replacing AC Power Supply Module

WARNING: DO NOT CONNECT POWER SUPPLY MODULE TO AC POWER BEFORE INSTALLING IN CONVERSION CENTER. FAILURE TO OBSERVE THIS CAUTION COULD RESULT IN EQUIPMENT DAMAGE AND/OR PERSONAL INJURY OR DEATH.

CAUTION: Wear a grounding device and observe electrostatic discharge precautions when replacing Power Supply Module in the 18-Slot Conversion Center. Failure to observe this caution could result in damage to, and subsequent failure of, the Power Supply Module.

To replace a Power Supply Module in the CPSMC18xx chassis:

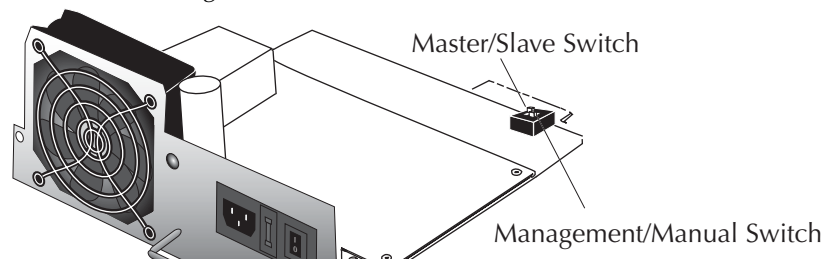
Remove Faulty Power Supply Module from Chassis

1. Disconnect outlet end of power cord from AC wall socket.
2. *At Conversion Center back*, disconnect power cord from power receptacle of Power Supply Module to be replaced.
3. Remove Power Supply Module to be replaced by removing two (2) screws that secure Power Supply Module to CPSMC18xx chassis and sliding Power Supply Module from chassis.

NOTE: Retain screws for installing replacement Power Supply Module.

Set Replacement Power Supply Module Master/Slave-Management/Manual Switch

The CPSMC18xx Power Supply Module is shipped with a set of Master/Slave-Management/Module switches installed on the circuit board.



*The **MASTER/SLAVE** switch allows the Power Supply Module to be configured as the primary (master) or as the secondary (slave) Power Supply Module. As primary (master), the Power Supply Module provides power to the chassis and all installed Slide-In-Cards, unless prevented from doing so due to external power source failure. As secondary (slave), the Power Supply Module waits in stand-by, ready to supply power to the chassis on primary (master) power source failure.*

*The **MANAGEMENT/MANUAL** switch allows TRANSITION Networks PointSystem™ software to control the primary (master) or secondary (slave) Power Supply Module setting AND TO OVER-RIDE THE PHYSICAL MASTER/SLAVE SWITCH SETTING ON THE POWER SUPPLY MODULE.*

NOTE: When the MANAGEMENT/MANUAL switch is set to MANAGEMENT, the default MASTER/SLAVE configuration is primary (master) unless changed, at the software interface, to secondary (slave).

4 MAINTENANCE & SERVICE

CAUTION: When installing two Power Supply Modules, AT LEAST ONE Power Supply Module MUST BE CONFIGURED AS PRIMARY (master). Failure to observe this caution could result in damage to, and subsequent failure of, Power Supply Module(s).

NOTE: If both Power Supply Modules are configured as the primary (master) Power Supply Module, each Power Supply Module contributes a portion of the power to the chassis ("load sharing").

AC and DC Power Supply Modules are not intended to load share when used concurrently. When operating a Conversion Center with an AC Power Supply Module in one slot and a DC Power Supply Module in the other, both Supplies may not be set to "Primary" (i.e., master)

1. Set MASTER/SLAVE switch, if necessary.

To configure the Power Supply Module as the primary (master) Power Supply Module, set MASTER/SLAVE switch to position labeled "MASTER". To configure the Power Supply Module as the secondary (slave) Power Supply Module, set MASTER/SLAVE switch to position labeled "SLAVE".
2. Set MANAGEMENT/MANUAL switch, if necessary.

To allow *PointSystem™* software to over-ride the physical MASTER/SLAVE switch setting, set MANAGEMENT/MANUAL switch to position labeled "MANAGEMENT". To prevent *PointSystem™* software from over-riding the physical MASTER/SLAVE switch setting, set MANAGEMENT/MANUAL switch to position labeled "MANUAL".

Install Replacement Power Supply Module in Chassis

1. Carefully slide replacement Power Supply Module into installation slot, aligning Power Supply Module with installation guides:

NOTE: Ensure that the Power Supply Module is firmly seated against the chassis backplane.
2. Carefully install two (2) retained screws through Power Supply Module into Conversion Center chassis, rotating clockwise to secure.

Connect to External Power

1. Connect female end of power cord to power receptacle on Power Supply Module.
2. Plug male end of power cord into correct voltage AC rack or wall socket.
3. Set Power Supply Module power switch to I.
4. Verify that Conversion Center is powered by observing illuminated Power LED and fan operation.

4.2 Replacing 48-VDC Power Supply Module

Read and follow all warning notices and instructions marked on the product or included in the manual

All installation and service must be performed by qualified service personnel.

This product is intended to be used in a restricted access location. Connect the product to a -48VDC SELV (Safety Extra Low Voltage) supply that is electrically isolated from the DC Source. The -48 VDC source is to be reliably connected to earth (ground). Equipment grounding is vital to ensure safe operation.

Prior to installation, use a voltmeter/ohmmeter to check the wiring for the presence of earth ground.

A readily accessible disconnect device as part of the building installation shall be incorporated into the fixed wiring. The disconnect device (a -48 VDC, 15 or 20A circuit breaker or switch) must be included in the ungrounded supply conductor. Overcurrent protection must be a 15 or 20A, -48 VDC fuse or circuit breaker.

WARNING: DO NOT CONNECT POWER SUPPLY MODULE TO POWER BEFORE INSTALLING IN CONVERSION CENTER. FAILURE TO OBSERVE THIS CAUTION COULD RESULT IN EQUIPMENT DAMAGE AND/OR PERSONAL INJURY OR DEATH.

CAUTION: Wear a grounding device and observe electrostatic discharge precautions when replacing Power Supply Module in the 18-Slot Conversion Center. Failure to observe this caution could result in damage to, and subsequent failure of, the Power Supply Module.

To replace a Power Supply Module in the CPSMC18xx chassis:

Remove Faulty Power Supply Module from Chassis

1. Set 48-VDC Power Supply Module power switch to **0**.
2. Disconnect +48-VDC terminal from Conversion Center terminal block control marked "+" by turning terminal screw counter-clockwise.
3. Disconnect -48-VDC terminal from Conversion Center terminal block control marked "-" by turning terminal screw counter-clockwise.
4. Disconnect ground terminal from Conversion Center terminal block control marked "chassis ground" by turning terminal screw counter-clockwise.
5. Remove Power Supply Module to be replaced by removing two (2) screws that secure Power Supply Module to CPSMC18xx chassis and sliding Power Supply Module from chassis. Retain screws for installing replacement Power Supply Module.

Set Replacement Power Supply Module Master/Slave-Management/Manual Switch

The CPSMC18xx Power Supply Module is shipped with a set of Master/Slave-Management/Module switches installed on the circuit board.

*The **MASTER/SLAVE** switch allows the Power Supply Module to be configured as the primary (master) or as the secondary (slave) Power Supply Module. As primary (master), the Power Supply Module provides power to the chassis and all installed Slide-In-Cards, unless prevented from doing so due to external power source failure. As secondary (slave), the Power Supply Module waits in stand-by, ready to supply power to the chassis on primary (master) power source failure.*

*The **MANAGEMENT/MANUAL** switch allows TRANSITION Networks PointSystem™ software to control the primary (master) or secondary (slave) Power Supply Module setting AND TO OVER-RIDE THE PHYSICAL MASTER/SLAVE SWITCH SETTING ON THE POWER SUPPLY MODULE.*

NOTE: When the MANAGEMENT/MANUAL switch is set to MANAGEMENT, the default MASTER/SLAVE configuration is primary (master) unless changed, at the software interface, to secondary (slave).

CAUTION: When installing two Power Supply Modules, AT LEAST ONE Power Supply Module MUST BE CONFIGURED AS PRIMARY (master). Failure to observe this caution could result in damage to, and subsequent failure of, Power Supply Module(s).

NOTE: If both Power Supply Modules are configured as the primary (master) Power Supply Module, each Power Supply Module contributes a portion of the power to the chassis ("load sharing").

AC and DC Power Supply Modules are not intended to load share when used concurrently. When operating a Conversion Center with an AC Power Supply Module in one slot and a DC Power Supply Module in the other, both Supplies may not be set to "Primary" (i.e., master)

1. Set MASTER/SLAVE switch, if necessary.

To configure the Power Supply Module as the primary (master) Power Supply Module, set MASTER/SLAVE switch to position labeled "MASTER". To configure the Power Supply Module as the secondary (slave) Power Supply Module, set MASTER/SLAVE switch to position labeled "SLAVE".
2. Set MANAGEMENT/MANUAL switch, if necessary.

To allow PointSystem™ software to over-ride the physical MASTER/SLAVE switch setting, set MANAGEMENT/MANUAL switch to position labeled "MANAGEMENT". To prevent PointSystem™ software from over-riding the physical MASTER/SLAVE switch setting, set MANAGEMENT/MANUAL switch to position labeled "MANUAL".

Install Replacement Power Supply Module in Chassis

1. Carefully slide replacement Power Supply Module into installation slot, aligning Power Supply Module with installation guides:

NOTE: Ensure that the Power Supply Module is firmly seated against the chassis backplane.

2. Carefully install two (2) retained screws through Power Supply Module into Conversion Center chassis, rotating clockwise to secure.

Connect to Power

CAUTION: Ensure that power source is NOT powered and that 48-VDC power ON/OFF switch is set to “O” when connecting to Power Supply Module. Failure to observe this caution could result in damage to, and subsequent failure of, Power Supply Module.

1. Connect +48-VDC terminal to Conversion Center terminal block control marked “+”. Turn terminal screw clockwise to secure.
2. Connect -48-VDC terminal to terminal block control marked “-”. Turn terminal screw clockwise to secure.
3. Connect ground terminal to Conversion Center terminal block control marked “**chassis ground**”. Turn terminal screw clockwise to secure.
4. Set 48-VDC Power Supply Module power switch to **I**.
5. Verify that Conversion Center is powered by observing illuminated Power LED and fan operation.

4.3 Replacing 48-VDC Power Supply Module Fuse

CAUTION: Wear a grounding device and observe electrostatic discharge precautions when replacing the 48-VDC fuse in the 48-VDC Power Supply Module. Failure to observe this caution could result in damage to, and subsequent failure of, the 48-VDC Power Supply Module.

CAUTION: Replace fuse only with same size and rating. Failure to observe this caution could result in equipment damage.

To replace a 48-VDC Power Supply Module fuse:

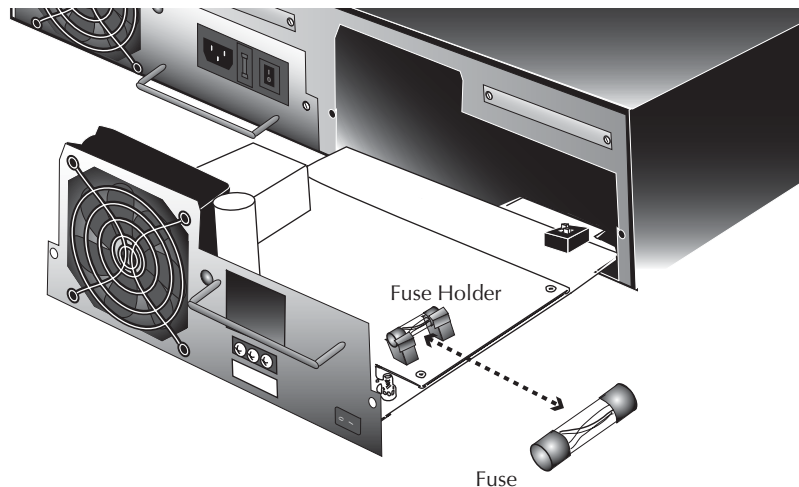
Remove Power Supply Module from Chassis

1. Set 48-VDC Power Supply Module power switch to **0**.
2. Disconnect +48-VDC terminal from Conversion Center terminal block control marked "+" by turning terminal screw counter-clockwise.
3. Disconnect -48-VDC terminal from Conversion Center terminal block control marked "-" by turning terminal screw counter-clockwise.
4. Disconnect ground terminal from Conversion Center terminal block control marked "chassis ground" by turning terminal screw counter-clockwise.
5. Remove Power Supply Module by removing two (2) screws that secure Power Supply Module to CPSMC18xx chassis and sliding Power Supply Module from chassis.

NOTE: Retain screws for re-installing Power Supply Module.

Replace Fuse on Power Supply Module Circuit Board

1. Locate fuse on 48-VDC Power Supply Module.



2. Carefully remove fuse from fuseholder.
3. Install **same size and rating** replacement fuse in fuse holder.

Replace Power Supply Module in Chassis

1. Carefully slide replacement Power Supply Module into installation slot, aligning Power Supply Module with installation guides:

NOTE: Ensure that the Power Supply Module is firmly seated against the chassis backplane.

2. Carefully install two (2) retained screws through Power Supply Module into Conversion Center chassis, rotating clockwise to secure.

Connect to Power

CAUTION: Ensure that power source is NOT powered and that 48-VDC power ON/OFF switch is set to "O" when connecting to Power Supply Module. Failure to observe this caution could result in damage to, and subsequent failure of, Power Supply Module.

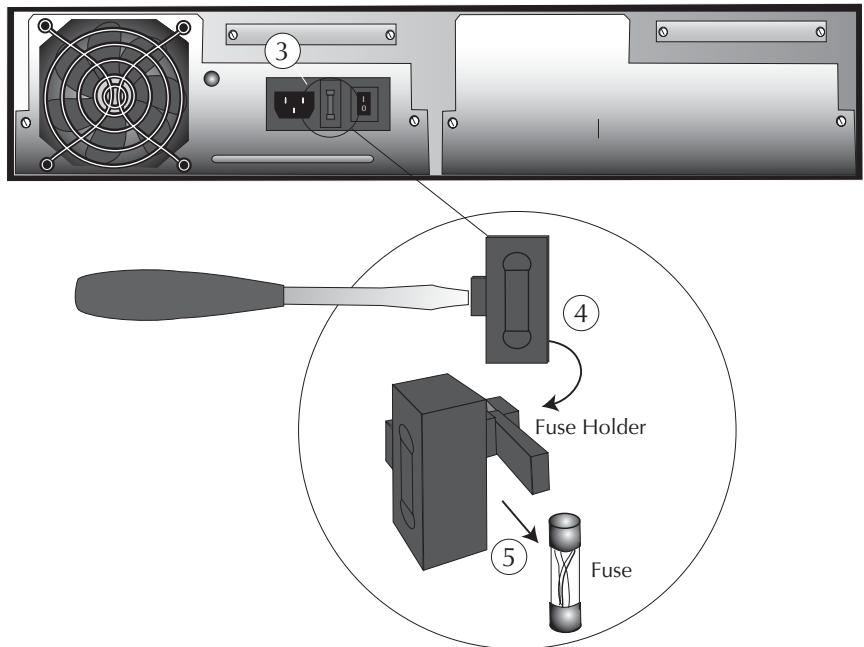
1. Connect +48-VDC terminal to Conversion Center terminal block control marked "+". Turn terminal screw clockwise to secure.
2. Connect -48-VDC terminal to Conversion Center terminal block control marked "-". Turn terminal screw clockwise to secure.
3. Connect ground terminal to Conversion Center terminal block control marked "chassis ground". Turn terminal screw clockwise to secure.
4. Set 48-VDC Power Supply Module power switch to I.
5. Verify that Conversion Center is powered by observing illuminated Power LED and fan operation.

4.4 Replacing AC Power Supply Module Fuse

CAUTION: Replace fuse only with same size and rating. Failure to observe this caution could result in equipment damage.

To replace an AC Power Supply Module fuse:

1. Disconnect outlet end of power cord from AC wall socket.
2. *At Conversion Center back*, disconnect power cord from Power Supply Module power receptacle.
3. From inside edge of power receptacle, insert small flat blade screwdriver into groove on front inside edge of fuse holder and carefully pry fuse holder (with installed fuse) from Power Supply Module.



4. Rotate fuse holder to display fuse.
5. Carefully remove fuse from fuse holder.
6. Install **same size and rating** replacement fuse in fuse holder.
7. Return fuse holder and fuse to installation position in Power Supply Module.

NOTE: Snap fuse holder into place.

8. Connect power cord to Power Supply Module power receptacle.
9. Connect power cord to AC wall socket.
10. Verify that POWER LED at front of 18-Slot Conversion Center is illuminated.

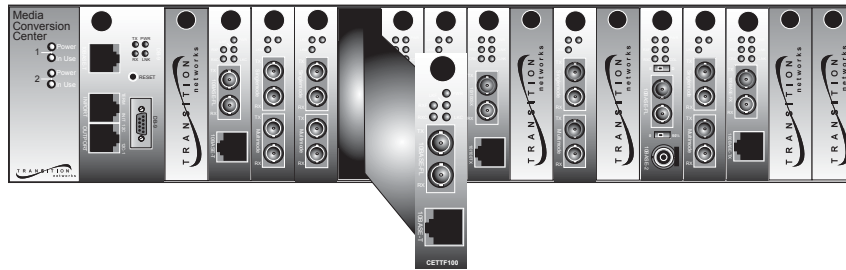
4.5 Replacing Media Converter Slide-In-Module

CAUTION: Wear a grounding device and observe electrostatic discharge precautions when replacing Media Converter Slide-in-Module(s). Failure to observe this caution could result in damage to, and subsequent failure of, the Media Converter Slide-in-Module(s).

NOTE: The Media Converter Slide-in-Modules are hot-swappable.

To replace a Media Converter Slide-in-Module in the CPSMC18xx chassis:

1. Remove Media Converter Slide-in-Module to be replaced by loosening one (1) screw that secures Slide-in-Module to CPSMC18xx chassis front and sliding Media Converter Slide-In-Module from CPSMC18xx chassis.
2. Align replacement Media Converter Slide-in-Module with Conversion Center installation slot so that panel fastener screw is at top of Management Module.



3. Carefully slide replacement Media Converter Slide-in-Module into installation slot.

NOTE: Ensure that Media Converter Slide-in-Module is firmly seated against backplane.

4. Install replacement Media Converter Slide-in-Module by carefully rotating attached panel fastener screw clockwise to secure Media Converter Slide-in-Module to CPSMC18xx chassis.

Appendix A. Technical Specifications

Dimensions

Chassis

17" x 14.3" x 3.5"
(430 mm x 363 mm x 89 mm)

Power Supply Modules

8.3" x 8.4" x 2.7"
(211 mm x 214 mm x 69 mm)

Media Converter Modules

3.4" x 0.86" x 5.0"
(86 mm x 22 mm x 127 mm)

Base Management Module

3.4" x 1.7" x 5.0"
(86 mm x 43 mm x 127 mm)

		DECLARATION OF CONFORMITY	
Name of Mfg:	Transition Networks 6475 City West Parkway, Minneapolis MN 55344 USA		
Model:	PointSystem™ Conversion Center™		
Part Number:	CPSMC1800-200, CPSMC1810-200, CPSMC1850-200		
Regulation:	EMC Directive 89/336/EEC		
Purpose: To declare that the PointSystem™ Conversion Center™ to which this declaration refers is in conformity with the following standards. EN 55022:1994; EN 55024:1998; FCC Part 15 Class A; EN 60950 A4:1997; UL 1950			
<i>I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).</i>			
 Stephen Anderson, Vice-President of Engineering			<u>July 14, 2000</u> Date

Shipping Weight

Chassis

17.5 Lbs

Power Input

CPSMP200

Universal Input 100-240V 50/60Hz 3.0-1.5 A

AC Input:

TN P/N	Requirement	Location
3344	120 volts, 60 hertz	USA/Canada/Mexico
3344	100 volts, 50-60 hertz	Japan
3347	230 volts, 50 hertz	Europe
3348	240 volts, 50 hertz	Australia
3349	240 volts, 50 hertz	United Kingdom

CPSMP210

48V DC 2.75 A Max

Power Distribution

CPSMP200

Power supply modules supply +12VDC at 9A maximum. (+12VDC at 9A is the maximum the chassis can supply to all front converters because only one supply provides power. The other is used if the first fails.) Each converter can draw a maximum of +12VDC at 0.3A.

CPSMP210

With 48VDC connected to the CPSMP210 module input terminal block, the power supply module will supply 12VDC at 12.5A maximum. Input Power: 48VDC at 2.75A typical (with fully loaded chassis); Output Power: 12VDC at 12.5A maximum

Environment

Temperature*:	0-50°C (32° to 122° F)
Storage Temperature:	-20 to 85°C
Humidity	10-90%, non condensing
Altitude	0-10,000 feet

*Refer to the power consumption data for EACH model Media Converter Slide-in-Module (provided in User's Guide shipped with Media Converter Slide-in-Module) to determine optimum site configuration.

Compliance

UL listed EN60950; FCC & CISPR class A & B; CE Mark

Warranty

Lifetime

Appendix B. Power Consumption Data Sheet

Typical *PointSystem™* Device Power Consumption

The table below lists the typical power consumption of the individual Slide-in-Module devices that are used with the CPSMC *PointSystem™* Conversion Center.

Slide-in-Module Media Converter	Typical Power Volt • Amps (Watts)
Base Chassis w/ Power Supply and Fan	6.5 W
Management Module	3.3 W
Expansion Module	2.4 W
2nd Power Supply	5.0 W
2nd Fan Module	4.5 W
CBFTF – 10/100Base-TX to 100Base-FX (6 port)	5.0 W
CBFTF – 10/100Base-TX to 100Base-FX(2 port)	4.0 W
CCSFC – Two (2) BNC ports to Fiber	4.5 W
CDFTF – 100Base-TX to 100Base-FX	6.8 W
CETCT – 10Base-T to 10Base-2	2.4 W
CETTF – 10Base-T to 10Base-FL	2.3 W
CFETF – 100Base-TX to 100Base-FX	3.5 W
CFETF – 100Base-TX to (Fiber) 100Base-FX	2.5 W
CFMFF – Singlemode to Multimode (all types)	3.3 W
CGETF – 1000Base-T to 1000Base-SX/LX Fiber	5.5 W
CPSVT – Copper to Fiber	5.0 W
CSDTF – RJ-45 or BNC to/from Fiber (T1/E1)	3.7 W
CSETF – 10/100Base-TX to 10/100Base-SX	3.6 W

VAC Power Considerations

Available Power at three temperature ranges

The tables below list the available power for the PointSystem™ Base Chassis (with an installed VAC Power Supply Module) at three temperature ranges: 0-40°C, 0-50°C, and 0-60°C. Note how the available power decreases as the temperature range increases.

PointSystem™ Chassis With Installed AC Power Supply Module

Power from the Base Chassis available for the devices →	Site Ambient Temperature		
	0 – 40°C	0 – 50°C	0 – 60°C *
	110 W	82 W	55 W

Sample VAC Power Requirements

The PointSystem™ Base Chassis with one Management Module provides installation space for up to sixteen (16) Media Converter Slide-In-Modules. However, depending on the Slide-In-Modules selected, or the temperature range of the Chassis, there may not be sufficient power for all sixteen devices.

The following table lists the power requirements for a PointSystem™ chassis with 16 CFETF “TX-FX” modules. Note the power requirements at three different temperature ranges. This example includes an efficiency error of 0.7 (for VAC power calculations) and assumes a 20% margin of error.

Note that only at the 0-40°C temperature range is there enough power available for all 16 CFETF “TX-FX” modules. At 0-50°C and 0-60°C, the lower available power (and the required second power supply for the 0-60°C range) make using all 16 modules impossible at these temperature ranges.

Temperature Range	0 - 40°C	0 - 50°C	0 - 60°C*
Base Chassis	6.5 W	6.5 W	6.5 W
Management Module	3.3 W	3.3 W	3.3 W
2 nd Power Supply*	n/a	n/a	5.0 W
16 CFETF “TX-FX” modules (16 x 2.5 W = 40.0 W)	40.0 W	40.0 W	40.0 W
Subtotal	49.8 W	49.8 W	54.8 W
VAC correction (divide by 0.7)	71.1 W	71.1 W	78.3 W
Error (add 20%)	+ 14.2 W	+ 14.2 W	+ 15.6 W
Corrected Power Req.	85.3 W	85.3 W	93.9 W
Available Power	110.0 W	82.0 W	55.0 W

(*Installation of a second Power Supply Module is optional for operation at 0-40°C or 0-50°C, but is required for operation at 0-60°C.)

VDC Power Considerations

Available Power at three temperature ranges

The tables below list the available power for the PointSystem™ Base Chassis (with an installed VDC Power Supply Module) at three temperature ranges: 0-40°C, 0-50°C, and 0-60°C. Note how the available power decreases as the temperature range increases.

PointSystem™ Chassis With Installed 48-VDC Power Supply Module

Power from the Base Chassis available for the devices →	Site Ambient Temperature		
	0 – 40°C	0 – 50°C	0 – 60°C *
	90 W	72 W	55 W

Sample VDC Power Requirements

The PointSystem™ Base Chassis with one Management Module provides installation space for up to sixteen (16) Media Converter Slide-In-Modules. However, depending on the Slide-In-Modules selected, or the temperature range of the Chassis, there may not be sufficient power for all sixteen devices.

The following table lists the power requirements for a PointSystem™ chassis with 16 CFETF “TX-FX” modules. Note the power requirements at three different temperature ranges. This example includes an efficiency error of 0.7 (for VAC power calculations) and assumes a 20% margin of error.

Note that at the 0-40°C and the 0-50°C temperature ranges is there enough power available for all 16 CFETF “TX-FX” modules. At 0-60°C, the lower available power, and the required second power supply, make using all 16 modules impossible at this temperature range.

Temperature Range	0 - 40°C	0 - 50°C	0 - 60°C*
Base Chassis	6.5 W	6.5 W	6.5 W
Management Module	3.3 W	3.3 W	3.3 W
2 nd Power Supply*	n/a	n/a	5.0 W
16 CFETF “TX-FX” modules (16 x 2.5 W = 40.0 W)	40.0 W	40.0 W	40.0 W
Subtotal	49.8 W	49.8 W	54.8 W
VDC correction (divide by 0.85)	58.6 W	58.6 W	64.5 W
Error (add 20%)	+ 11.7 W	+ 11.7 W	+12.9 W
Corrected Power Req.	70.3 W	70.3 W	77.4 W
Available Power	90.0 W	72.0 W	55.0 W

(*Installation of a second Power Supply Module is optional for operation at 0-40°C or 0-50°C, but is required for operation at 0-60°C.)

